

**CLAIMS**

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

- 1        1. An analyte detection station for an automated immunoassay analyzer,  
2        comprising:
  - 3            a housing;
  - 4            a detector for detecting radiant energy or color connected to said  
5        housing;
  - 6            a transport device for transporting a plurality of vessels, each of  
7        said vessels containing at least one bound analyte and at least one  
8        compound for emitting radiant energy or color; and
  - 9            a transfer device for transferring one of said plurality of vessels  
10      from said transport device into said housing, wherein  
11      said housing having a shield for shielding radiant energy emanating  
12      from a source outside of said housing from being detected by said detector,  
13      whereby only radiant energy from said one of said plurality of vessels  
14      transferred from said transport device by said transferring device is  
15      detected by said detector, and
- 1        2. The analyte detection station for an automated immunoassay analyzer  
2        as recited in claim 1, wherein said detector detects chemiluminescence.
- 1        3. The analyte detection station for an automated immunoassay analyzer as  
2        recited in claim 1, wherein said detector detects fluorescence.
- 1        4. The analyte detection station for an automated immunoassay analyzer  
2        as recited in claim 1, wherein said detector detects phosphorescence.
- 1        5. The analyte detection station for an automated immunoassay analyzer

2 as recited in claim 1, wherein said housing includes a mechanism for  
3 moving said one of said plurality of vessels from an unshielded position  
4 when it is transferred from said transport device to said housing to a  
5 shielded position when said detector is detecting said radiant energy.

1 6. The analyte detection station for an automated immunoassay analyzer  
2 as recited in claim 5, wherein a means for biasing the test vessel in said  
3 detection station a set distance from the detection mechanism when in the  
4 read position.

1 7. The analyte detection station for an automated immunoassay analyzer  
2 as recited in claim 5, wherein said mechanism for moving operates by  
3 rotational movement.

1 8. The analyte detection station for an automated immunoassay analyzer  
2 as recited in claim 5, wherein said mechanism for moving said one of said  
3 plurality of vessels to a disposal position for disposing of said vessel after  
4 it moves said vessel to said shielded position.

1 9. The analyte detection station for an automated immunoassay analyzer  
2 as recited in claim 7, wherein said mechanism for moving operates by  
3 rotational movement.

1 10. The analyte detection station for an automated immunoassay analyzer  
2 as recited in claim 1, wherein said transport device is a continuous  
3 carousel, chain or belt which includes a plurality of vessel receptacles for  
4 receiving each of said plurality of vessels.

1 11. The analyte detection station for an automated immunoassay analyzer  
2 as recited in claim 9, wherein said continuous chain or belt can receive  
3 vessels in said vessel receptacles at a plurality of locations.

1       12. The analyte detection station for an automated immunoassay analyzer  
2       as recited in claim 1, further comprising an attenuation means for  
3       attenuating light signals.

4       13. The analyte detection station for an automated immunoassay analyzer  
5       as recited in claim 12, wherein said attenuation means includes an  
6       attenuation device located between said housing and said detector, wherein  
7       said attenuation device can be set at any one of at least two attenuation  
8       positions,

1       14. The analyte detection station for an automated immunoassay analyzer  
2       as recited in claim 12, wherein said any one of at least two attenuation  
3       positions include:

4              an unattenuated position where light from said vessel can be read  
5       directly by said detector, and

6              an attenuated position where light from said vessel can be read by  
7       the detector through neutral density filter.

1       15. The analyte detection station for an automated immunoassay analyzer  
2       as recited in claim 12, wherein said attenuation means includes an  
3       attenuation device located between said housing and said detector, wherein  
4       said attenuation device can be set at any one of at least three attenuation  
5       positions.

1       16. The analyte detection station for an automated immunoassay analyzer  
2       as recited in claim 12, wherein said any one of at least three attenuation  
3       positions include:

4              an unattenuated position where light from said vessel can be read  
5       directly by said detector,

6              a dark position where no light from said vessel can be read by said

7       detector, and  
8           an attenuated position where light from said vessel can be read by  
9       the detector through neutral density filter.

1       17. The analyte detection station for an automated immunoassay analyzer  
2       as recited in claim 1, further comprising a means for measuring dark  
3       counts for determining ambient light levels within the detection means.